

CLAIMS

1. An expander comprising:

a casing (11);

5 a rotor (22) rotatably supported in the casing (11); and

an axial piston cylinder group (56) arranged annularly in the rotor (22) so as to surround an axis (L) of the rotor;

the rotor (22) being rotated by supplying high-temperature, high-pressure steam to an expansion chamber (43) defined between a piston (42) and a cylinder sleeve (41) of the axial piston cylinder group (56), and sliding surfaces of the piston (42) and the cylinder sleeve (41) being lubricated with oil;

characterized in that the piston (42) comprises a top part (63) that is exposed to high-temperature, high-pressure steam within the expansion chamber (43), an end part (61) that abuts against a swash plate (31), and a middle part (62) that is present between the end part (61) and the top part (63) and is in sliding contact with the cylinder sleeve (41), the top part (63) being formed from a heat-resistant and corrosion-resistant material, the end part (61) being formed from a material having high surface pressure resistance, and the middle part (62) being formed from a material having high abrasion resistance.

20 2. The expander according to Claim 1, wherein a heat-insulating space (65) is provided between the top part (63) and the middle part (62).

3. The expander according to either Claim 1 or Claim 2, wherein a hollow space (62a) is formed in the middle part (62), an oil ring channel (63b) formed on an outer peripheral face of the top part (63) communicates with the hollow space (62a) via a first oil hole (63c), and a small diameter part (62b) formed on an outer peripheral face of the middle part (62) communicates with the hollow space (62a) via a second oil hole (62c).